WHAT IS CLAIMED IS:

- 1. An apparatus for transmitting a waveform reflecting a time-varying magnetic resonance radio 1 2 frequency signal comprising;
- (a) a waveform generator, wherein the waveform generator uses data reflecting the time-3
- varying magnetic resonance radio frequency signal to generate a waveform having a time-
- varying property; and
- (b) a signal transmitter that transmits the waveform having the time-varying property to a 6 magnetic resonance scanner. 7
 - 2. The apparatus of claim 1, wherein the waveform generator comprises a control device.
 - The apparatus of claim 2, wherein the control device is a computer.
 - 4. The apparatus of claim 1, wherein the waveform generator comprises a base-band or intermediate frequency generator and modulator, or a digital frequency synthesizer.
 - 5. The apparatus of claim 1, wherein the time-varying property is amplitude, frequency, or phase.
 - 6. The apparatus of claim 1, wherein the signal transmitter is an antenna or cable.
 - 7. The apparatus of claim 1, further comprising a magnetic resonance scanner.
 - 8. The apparatus of claim 1, further comprising a keyboard.
 - 9. The apparatus of claim 1, further comprising a monitoring device that records operating parameters of a magnetic resonance scanner or free induction decay signals.
 - 10. The apparatus of claim 9, wherein the monitoring device is a digital or analog signal recorder.
 - 11. An apparatus for transmitting a waveform reflecting a magnetic resonance radio frequency signal comprising:
- (a) a storage medium that stores data reflecting the magnetic resonance radio frequency signal; 21
- (b) a waveform generator, wherein the waveform generator uses data reflecting the magnetic 22 resonance radio frequency signal to generate a waveform; and 23
 - (c) a signal transmitter that transmits the waveform to a magnetic resonance scanner.
- 12. The apparatus of claim 11, wherein the storage medium is random access memory, a magnetic 25 storage medium, or an optical disk. 26
- 13. The apparatus of claim 11, wherein the waveform generator comprises a control device. 27
- 14. The apparatus of claim 13, wherein the control device is a computer. 28
- 15. The apparatus of claim 11, wherein the waveform generator comprises a base-band or 29 intermediate frequency generator and modulator, or a digital frequency synthesizer. 30

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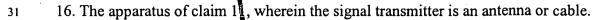
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- 17. The apparatus of claim 11, further comprising a magnetic resonance scanner. 32
- 18. The apparatus of claim 11 further comprising a monitoring device that records operating 33 parameters of a magnetic resonance scanner or free induction decay signals in the storage 34 medium. 35
- 19. The apparatus of claim 18, wherein the monitoring device is a digital or analog signal recorder. 36
- 20. An apparatus for transmitting a waveform reflecting a magnetic resonance imaging signal 37 comprising: 38
 - (a) a waveform generator, wherein the waveform generator uses data reflecting the magnetic resonance imaging signal to generate a waveform having a time-varying property;
 - (b) a signal transmitter that transmits the waveform having the time-varying property; and
 - (c) a magnetic resonance scanner that receives the waveform and uses it to produce an image.
 - 21. The apparatus of claim 20, wherein the waveform generator comprises a control device.
 - 22. The apparatus of claim 21, wherein the control device is a computer.
 - 23. The apparatus of claim 20, wherein the waveform generator comprises a base-band or intermediate frequency generator and modulator, or a digital frequency synthesizer.
 - 24. The apparatus of claim 20, wherein the signal transmitter is an antenna or cable.
 - 25. A method of transmitting a waveform reflecting a time-varying magnetic resonance radio frequency signal comprising:
 - (a) providing data reflecting the time-varying magnetic resonance radio frequency signal to a waveform generator;
 - (b) generating a waveform having a time-varying property based on the data reflecting the time-varying magnetic resonance radio frequency signal using the waveform generator; and
- (c) transmitting the waveform having the time-varying property to a magnetic resonance 54 scanner. 55
- 26. The method of claim 25, wherein the time-varying property is amplitude, frequency, or phase. 56
- 27. The method of claim 25, further comprising: 57
- (d) storing data reflecting the time-varying MR RF signal. 58
- 28. The method of claim 25, further comprising: 59
- (d) detecting the waveform having the time-varying property. 60

